

## STRATEGIES OF RELATIVIZATION REVISITED

Don Weeda

The University of Iowa

Keenan and Comrie (1977) (hereafter, K&C) and Maxwell (1979) have presented distinct alternative relative clause typologies in order to make universal statements primarily concerning the relationship between relativization and grammatical relations. Classes of relative clause types in both of these studies are called strategies. I will show that the adequacy of the two competing typologies depends primarily on what we consider to be the motivation for typological study; that several of these considerations indicate that K&C's typology is insufficient. Finally, some revisions of Maxwell's typology will be proposed, with emphasis on responding to the criticisms of Comrie and Keenan (1979).

Keenan's first published reference to "strategies" is in explication of his theory of semantically-based grammar (1972), primarily addressed to the possibility of modifying the predicate calculus as a basis for natural language semantics. In his system, a Pro-name, or NP place holder, in an embedded sentence may be relativizable in a given language, and some "strategies" have the property of being more effective in relativizing certain positions on the Accessibility Hierarchy (AH):

### (1) Accessibility Hierarchy (AH)

SU > DO > IO > OBL > GEN > OCOMP<sup>1</sup>

(K&C, p.66)

The AH is well-known. Traditional grammar recognized that certain grammatical relations are more basic than others. Therefore, it is a natural extension of that concept to investigate the possibility that major grammatical relations should be more susceptible to important grammatical processes such as relativization. In most cases the generalizations based upon the AH known as the hierarchy constraints are true of natural languages:

(2) Strong form of the Hierarchy Constraints (HC's)  
(falsified by (3))

HC1. A language must be able to relativize subjects.

HC2'. If a language can relativize any position on the AH, it can relativize all higher positions.

HC3'. Relativizability may cut off at any point on the AH below subject.

All languages relativize subjects; languages that relativize objects relativize subjects; nearly all languages that relativize indirect objects relativize direct objects; and so on.

Notice that if the hierarchy constraints were true of all languages, there would have been no need for K&C to use the notion of a "relativization strategy" in their typology. However, in their sample, several members of the Austronesian family of languages show patterns of relativization which leave a gap on the hierarchy:

(3) Counterexamples to the strong form of the HC's:

|              | SU | DO | IO | OBL | GEN | OCOMP |
|--------------|----|----|----|-----|-----|-------|
| Toba Batak   | +  | -  | +  | +   | +   |       |
| Iban         | +  | -  | -  | +/- | -   | -     |
| Javanese     | +  | -  | -  | -   | +   |       |
| Minang-Kebau | +  | -  | -  | +   | +   | **    |

The positions which are relativizable form discontinuous segments on the AH which falsifies the strongest hypothesis about the relationship between relativization and the AH. Nevertheless, in these languages, the relational positions flanking the gap are relativized in distinctly different ways: While the positions higher on the hierarchy appear to have the relativized NP deleted, the positions on the lower end retain some semantic features of the relativized NP in the form of a relative or resumptive pronoun. Therefore, by distinguishing between different "strategies" of relativization, we may retain the hierarchy constraints which were falsified when relativization was considered in the language as a whole:

## (4) The Hierarchy Constraints (HC's)

- HC1. A language must be able to relativize subjects.
- HC2. Any RC-forming strategy must apply to a continuous segment of the AH.
- HC3. Strategies that apply at one point of the AH may in principle cease to apply at any lower point.

(K&amp;C, p.67)

"Strategy" cannot be used as an informal term, since this would render at least the second hierarchy constraint empirically vacuous. K&C have proposed that relative clauses be classified on the basis of the relative position of restricting clause to head noun (postnominal, prenominal, or internal) and on the basis of ease of recoverability of the case of the relativized NP from surface ([-case] or [+case]). The post-/pre-nominal distinction plays no role in the validating of the hierarchy constraints; thus the hierarchy constraints are true even if we do not divide languages into position types. Therefore, it is only the [+case] distinction that is required to state the hierarchy constraints in the present form.

Significantly, the explicit definition of [±case] seems more complicated, less obvious than the positional distinction. A strategy is [+case] if it "presents a nominal element in the restricting clause that unequivocally expresses which NP position is being relativized" (p.65). Otherwise it is [-case]. For example, in informal English, (5a) is [-case] since the nominal element who does not contrast with the nominal element in (5b).

(5) Informal English (K&C: Postnom, [-case])

- a. the girl who John likes (direct object)
- b. the girl who likes John (subject) (K&C, p.65)

However, these nominal elements are case-marked in standard Russian (6), which therefore is [+case] for these positions.

## (6) Standard Russian (K&amp;C: Postnom, [+case])

- a. devuška, kotoruju Džon ljubit (direct object)
- b. devuška, kotoraja ljubit Džon (subject)

(K&amp;C, p.65-6)

Russian employs case-marked relative pronouns in relativization; another way of case coding is by the use of anaphoric pronouns as in Hebrew (7).

## (7) Hebrew (K&amp;C: Postnom, [+case])

ha-isha she-Yon natan la et ha-sefer  
 the-woman that-John gave to-her DO the-book  
 "the woman that John gave the book to" (K&C, p.66)

Notice that [ $\pm$ case] makes no claims about a general notion of recoverable case. For example, the English example (5) is [-case] though case is recoverable from considerations of word order. Similarly, in Malagasy, only subjects may be relativized. Malagasy's strategy is [-case] according to K&C since no nominal element is present, only an invariant marker izay similar to English that. Nevertheless, case is recoverable simply due to the subject-only constraint on relativization. Thus the presence of a case-marked nominal element is the defining criterion rather than a general notion of case recoverability.

This definition of [ $\pm$ case] is later modified in Comrie and Keenan (1979) (hereafter, C&K), possibly to account more equitably for the case of stranded prepositions.

## (8) English

- a. the chest in which John put the money  
 (K&C: Postnom, [+case])
- b. the chest which John put the money in  
 (K&C: Postnom, ?? )

(8a) is considered [+case] because the nominal element in which is clearly case-coded. However, according to the given criteria (8b) must be considered [-case] because the only appearing nominal element, the relative pronoun which, is not case-coded, its

preposition having been stranded. However, it is obvious that at least as much case-coding information is available in (8b) as in (8a). Therefore, C&K present a revised definition of [+case]: The [+case] strategy must contain a "nominal particle" which may either be a nominal element or "something like a pre- or post-position, which forms a constituent with NP's in simple sentences....A relative clause strategy is [+case] if the nominal element in the restricting clause marks the relativized NP AT LEAST as explicitly as is normally done in simple declarative sentences....If case marking and/or word order properties of the nominal element discriminate the relativized NP from other NP's in the restricting clause to the same extent, by and large, as in simple main clauses, then the relative clause strategy is [+case]." (C&K, p.656)

Given this revised definition of [ $\pm$ case], assuming that we sort out the confusion between nominal element and nominal particle, we may now claim (8b) to be [+case]. However, we are less sure about whether (5a,b) are [+case] or [-case] since only (5b) presents the relative pronoun in a position associated with surface structure subject and is thus a nominal particle, making (5a) a candidate for the [+case] subtype discriminated by word order properties. Furthermore, C&K's pre-/post-position is another undefined primitive, since "forms a constituent with NP's" is often appropriate of verbs; and furthermore, in some languages, prepositions and verbs are difficult to partition. (For example, in Iban, the word *enggau* meaning "together, with" functions as a verb while resembling a preposition (Maxwell, p.369).) Thus, while motivated by appropriate empirical considerations, the revised definition of [ $\pm$ case] is more indefinite and obscure than the original problematic definition, such vagueness being indicated by such phrases in the revision as "by and large."

If we disregard the major changes of introducing word order as a possible case-marking device and the other problems, we may now partition relative clause types into strategies that obey the hierarchy constraints (see (9), next page) for those problematic languages which were counterexamples to the strong form of the hierarchy constraints.

An alternative typology of strategies is defined by Maxwell (1979). Without claiming K&C's criteria to be insufficient, Maxwell shows that additional universals are formulable in this

- (9) Counterexamples to the strong form of the HC's (2) reclassified according to K&C's HC's (4) and strategy partitions Postnom/Prenom/Internal and [ $\pm$ case]

| TOBA BATAK         | SU | DO | IO | OBL | GEN | OCOMP |
|--------------------|----|----|----|-----|-----|-------|
| 1. Postnom,[-case] | +  | -  | -  | -   | -   |       |
| 2. Postnom,[+case] | -  | -  | +  | +   | +   |       |
| IBAN (Sea Dayak)   |    |    |    |     |     |       |
| 1. Postnom,[-case] | +  | -  | -  | -   | -   | -     |
| 2. Postnom,[+case] | -  | -  | -  | +/- | -   | -     |
| JAVANESE           |    |    |    |     |     |       |
| 1. Postnom,[-case] | +  | -  | -  | -   | -   |       |
| 2. Postnom,[+case] | -  | -  | -  | -   | +   |       |
| MINANG-KEBAU       |    |    |    |     |     |       |
| 1. Postnom,[-case] | +  | -  | -  | -   | -   | **    |
| 2. Postnom,[+case] | -  | -  | -  | +   | +   | **    |

alternative framework based on an informal proposal by Givón (1975, reprinted in Givón 1979). Maxwell retains the prenominal/postnominal distinction while claiming that K&C's internal type is not an instance of a head noun within a restricting clause but rather a retained full NP belonging to the subordinate clause which is coreferential to the normally deleted head NP of the matrix.<sup>2</sup> Thus Maxwell essentially renames K&C's internal strategies, in languages like Bambara and Hindi, non-reduction strategies. The remainder of Maxwell's categories are claimed to be distinguished on the basis by which the case of the relativized position is retained. A relative clause with a missing shared nominal is called a word-order strategy (WO-S) since case is claimed to be recovered on the basis of the order of sentential elements. A relative clause whose shared nominal is replaced or displaced and case-coded by a relative pronoun or the combination of preposition plus relative pronoun is called a relative pronoun strategy (REL-S). A third strategy involves the replacement (or survival) of the relativized NP by an anaphoric pronoun, usually in the normal surface position of the relativized NP; this is the anaphoric pronoun strategy (PRO-S).

The relationship between K&C's and Maxwell's criteria is summarized in (10):

(10) Essential correspondences between K&C's and Maxwell's criteria

|               | <u>K&amp;C</u> | <u>Maxwell</u>           |
|---------------|----------------|--------------------------|
| 1st component | postnominal    | postnominal <sup>@</sup> |
|               | prenominal     | prenominal <sup>@</sup>  |
|               | internal       |                          |
| 2nd component |                | non-reduction strategy   |
|               | [-case]        | WO-S                     |
|               | [+case]        | REL-S<br>PRO-S           |

<sup>@</sup> stated only on WO-S and PRO-S

It is important to note that relative pronouns of a REL-S must code the case of the relativized NP; otherwise, it is to be considered an example of a WO-S or PRO-S. Therefore, the stranded preposition case of English (8b) is considered a WO-S, and the Fulani relative in (11), which contains both ndu, a fronted but non-case-coding relative pronoun, and an anaphoric pronoun muudu coded by a preposition nder, is considered PRO-S.

(11) Fulani, Gombe dialect (Maxwell: Postnom PRO-S)

Wala        suudu [ ndu mi-ndaar aayi nder muudu ]  
 there-is-not hut    which I-looked not in it  
 "there is not a hut in which I haven't looked"  
 (Maxwell, p.356)

In all cases, Maxwell claims to take as diagnostic the method by which the case of the relativized NP is coded, and given a conflict between form and position, resolves the identification in favor of the form. Thus case-coded and fronted anaphoric pronouns indicate PRO-S rather than REL-S.

There are several advantages to the Maxwell-Givón typology. First of all, additional universals are expressible. The fact

that a PRO-S if it exists at all in the language will relativize the lowest relativizable position on the AH simply cannot be stated in K&C's terms. Similarly, one cannot state that all REL-S's are postnominal (since there exist prenominal PRO-S's) nor that REL-S never allows relativization into complex NP's. Therefore, it might be argued that it is important to be able to state these universals in a unified typological framework and that Maxwell's typology should be used instead.

Second, the second hierarchy constraint is significantly restricted so as to deny the existence of languages such as Language W:

- (12) Language W, a hypothetical language excluded by Maxwell's criteria but not by K&C's criteria:

| a. *LANGUAGE W (Maxwell) | SU | DO | IO | OBL |
|--------------------------|----|----|----|-----|
| 1.REL-S                  | +  | -  | +  | ... |
| 2.Postnom PRO-S          | -  | +  | -  | ... |

(Maxwell, p.364)

b. LANGUAGE W (K&C)

|                   |   |   |   |     |
|-------------------|---|---|---|-----|
| 1.Postnom,[+case] | + | + | + | ... |
|-------------------|---|---|---|-----|

Since Postnom PRO-S and REL-S are both [+case] in K&C's typology, this is a permissible situation (12b) since the [+case] strategy would contain no discontinuity. However, this situation does not appear to occur in natural languages, and by Maxwell's criteria the possibility of Language W is excluded since the Postnom PRO-S would be discontinuous (12a) and therefore constitute a violation of K&C's second hierarchy constraint, which insures continuity of strategies; an apparently correct result. Therefore, Maxwell has strengthened the hierarchy constraints by the additional distinction between REL-S and PRO-S, conflated to [+case] in K&C's typology.

Indeed, the essential difference between the two typologies is that Maxwell distinguishes between two subcases of K&C's undifferentiated [+case] category. Intuitively, we would expect to find an intimate relationship between cases of REL-S and PRO-S in individual natural languages if K&C's typology were correct. However, it seems to be the case that maintaining



that REL-S and PRO-S are two instances of the same natural language phenomenon only hinders our description of relative clause types in certain languages. The best example of the descriptive inadequacy of K&C's conflation of REL-S and PRO-S into [+case] that I have been able to find is in Bahasa Indonesia, an Austro-nesian language. Bahasa Indonesia, not included in K&C's sample, is very closely related to Bahasa Malaysia, the "Malay" of K&C's sample. Nevertheless, Bahasa Indonesia appears to have patterns of relativization distinct from those of the sister language.

(13) Examples of relativization in Bahasa Indonesia, Sumatra dialect

- a. perempuan yang me-mesak ikan itu  
     woman      that Trans-cook fish the  
     "the woman who cooked the fish"
- b. burung yang terbang di atas gunung itu kemarin  
     bird      that fly on top mountain the yesterday  
     "the bird that flew over the mountain yesterday"
- c. ikan yang perempuan itu masak  
     fish that woman the cook  
     "the fish that the woman cooked"
- yang/ Ø      K&C:[-case], Maxwell:W0-S
- d. anak untuk siapa perempuan itu mem-beli-kan baju itu  
     child for who? woman the Trans-buy-Ben clothes the  
     "the child that the woman bought the clothes for"
- e. gadis dengan siapa Ali berjalan  
     girl with who? A. walk  
     "the girl that Ali was walking with"
- Prep/ WH      K&C:[+case], Maxwell:REL-S
- f. budak yang dia di-beri-kan kepada raja oleh Ali  
     slave that he Pass-give-Ben to king by A.  
     "the slave that Ali gave to the king"
- g. gadis yang saya berjalan dengan nya  
     girl that I walk with her  
     "the girl that I walked with"
- h. perempuan yang budak nya mem-beri-kan jagung...  
     woman that slave her Trans-give-Ben corn  
     "the woman whose slave gave corn..."

...kepada lembu itu  
           to      cow the  
 ...to the cow"

yang/ PRO      K&C:[+case], Maxwell:PRO-S

An examination of relativization in Bahasa Indonesia shows three separate structural types: All constructions are postnominal. The first structural type (13a,b,c) uses the invariant marker yang while the relativized NP does not appear. Since yang is an invariant marker coding no semantic features of the shared nominal, we may safely conclude that yang is not a nominal particle, and that therefore K&C would type this construction [-case]; Maxwell as WO-S. The second type (13d,e) uses a preposition plus relative pronoun, the combination of which is always fronted. For K&C, these are [+case], while for Maxwell they are REL-S. The third construction (13f,g,h) uses the invariant marker yang plus a retained anaphoric pronoun in the original argument position. Thus again the requirements of K&C's [+case] are met; while for Maxwell this third construction is PRO-S.

Let us now examine the relational domains of these constructions on the AH in Maxwell's typology:

| (14) BAHASA INDONESIA (Austronesian, Sumatra dialect)<br>(Maxwell) |    |    |    |     |     |       |
|--|----|----|----|-----|-----|-------|
|  | SU | DO | IO | OBL | GEN | OCOMP |
| 1. Postnom WO-S  | +  | ?  | -  | -   | -   | **    |
| 2. REL-S   | -  | -  | +  | +   | -   | **    |
| 3. Postnom PRO-S   | +  | +  | +  | +/- | +   | **    |

We may attribute all instances of Postnom WO-S in the informal language to subject-relativization. However, Chung (1976) has argued that in the formal language, direct objects must be conceded to be relativizable by the Postnom WO-S as well as subjects. (This is based on examples like (13c), which cannot be generated by means of the Old Passive/Object Preposing promotion rule). I have some doubts as to whether there exists a clear case of WO-S relativized direct objects in Bahasa Indonesia; however, the issue is immaterial to our concerns since it is the distinction between the REL-S and PRO-S which is most important

to us.

The REL-S relativizes indirect objects and obliques, while the PRO-S relativizes all positions on the AH. Nevertheless, the domain of REL-S is not in a subset relation to the domain of PRO-S since certain obliques may only be relativized by REL-S:

- (15) Certain constructions not relativizable by PRO-S are relativizable by REL-S in Bahasa Indonesia:

PRO-S: \*tempat yang aku me-letak-kan buku itu di nya  
place that I Trans-put-Ben book the in it

REL-S: tempat di-mana aku me-letak-kan buku itu  
place in-which I Trans-put-Ben book the  
"the place where I put the book"

Thus, as differentiated by Maxwell's criteria, the REL-S and PRO-S relatives of Bahasa Indonesia are structurally dissimilar in several ways: The domains of applicability of these two strategies are neither complementary nor related as set to subset. We are forced by K&C's typology to unite these two relative clause types into a single strategy in Bahasa Indonesia for no good reason:

- (16) BAHASA INDONESIA (Austronesian, Sumatra dialect) (K&C)

|                    | SU | DO | IO | OBL | GEN | OCOMP |
|--------------------|----|----|----|-----|-----|-------|
| 1. Postnom,[-case] | +  | ?  | -  | -   | -   | **    |
| 2. Postnom,[+case] | +  | +  | +  | +   | +   | **    |

Intuitively, the patterns of relativization in Bahasa Indonesia demonstrate the desirability of the division of [+case] made by Maxwell, since without it we cannot even refer to the separate constructions as distinct relativization strategies. Since distinguishing between quite obviously different constructions in a given language would seem to be a valid typological goal, such considerations lead us to propose that the distinctions Maxwell is making are correct. Notice, however, that this is not an argument for favoring Maxwell's three-way distinction over a further partition of K&C's [+case] into REL-S and PRO-S.

Bahasa Indonesia is not the only language with structurally and relationally distinct REL-S and PRO-S relativization strate-

gies. Bahasa Malaysia, colloquial Czech, modern Greek, Rumanian, and Slovenian of the languages in K&C's sample also bear this distinction, although none of these present quite as strong a case of the necessity of this division as Bahasa Indonesia since the domains of the strategies in these languages bear either complementary relations to each other on a continuous segment of the AH (as Bahasa Malaysia, (17)) or else a subset/superset relationship (as colloquial Czech, (18)).

(17) BAHASA MALAYSIA ("Malay")

|                  | SU | DO  | IO | OBL | GEN | OCOMP |
|------------------|----|-----|----|-----|-----|-------|
| 1. Postnom WO-S  | +  | +/- | -  | -   | -   | **    |
| 2. REL-S         | -  | -   | +  | +   | -   | **    |
| 3. Postnom PRO-S | -  | -   | -  | -   | +   | **    |

(Maxwell, p.363)

|                      |   |     |   |   |   |    |
|----------------------|---|-----|---|---|---|----|
| 1. Postnom,[-case]   | + | +/- | - | - | - | ** |
| 2/3. Postnom,[+case] | - | -   | + | + | + | ** |

(adapted from K&C, p.78)

(18) CZECH (colloquial)

|                  | SU | DO  | IO | OBL | GEN | OCOMP |
|------------------|----|-----|----|-----|-----|-------|
| 1. Postnom WO-S  | +  | +/- | -  | -   | -   | -     |
| 2. Postnom PRO-S | -  | -/+ | +  | +   | +   | +?    |
| 3. REL-S         | +  | +   | +  | +   | +   | +?    |

(Maxwell, p.363)

|                        |   |   |   |   |   |    |
|------------------------|---|---|---|---|---|----|
| 1/2/3. Postnom,[+case] | + | + | + | + | + | +? |
|------------------------|---|---|---|---|---|----|

(adapted from K&C, p.76)

This shows that the situation in which what might be maintained to be separate [+case] strategies in a single natural language is not uncommon, and that in order to be descriptively adequate, the distinctions made in Maxwell's typology are definitely appropriate to the typological study of relative clauses.

Let us now consider some problems with Maxwell's proposed typology, some of which have been noted by Comrie and Keenan (1979), since it is to our advantage to be able to retain the distinction between REL-S and PRO-S. First, the term "word-order strategy" is misleading. Maxwell considers relativization in Tagalog to be an example of a word order strategy. However, the surface case is always recoverable since only subjects can be relativized (actually, "subject" in this context is what Phillipinists call the "topic"; see Schachter 1977). Even the deep case of the relativized NP can be recovered due to verb-marking which is characteristic of topic-formation. Nevertheless, even though case is recoverable, word-order plays no part in the recovery since nominal arguments in Tagalog may be placed in any order after the verb, and therefore the position of the gap cannot be determined. Hence, the term "word-order strategy" for this construction is misleading, even though the Tagalog construction fits the description of no other strategy-type.

Also, in Dutch, which Maxwell claims to be a word-order strategy (19), the case of the relativized NP cannot be determined since subject and object NP's are formed in exactly the same way, as Maxwell himself notes.<sup>3</sup>

(19) Example of the Dutch Postnom "WO-S":

de man die het meisje slaat  
 the man that the girl hit  
 "the man that the girl hits" or  
 "the man that hits the girl"

Since case is not recoverable in such Dutch relatives, it makes no sense to say that the case is recovered by means of word order; therefore, Maxwell's term "word order strategy" is inaccurate. Yet K&C's term [-case] is problematic as well since case often is quite recoverable in these constructions, as in Malagasy and Tagalog, above. Therefore, we would like that another term used by Givón in his informal typology, gap strategy (GAP-S) be used in place of both WO-S and [-case].

The second problem with Maxwell's typology is that it allows hypothetical languages which K&C's typology will not allow such as Language X (20) (we take the liberty of substituting the new term GAP-S).

- (20) Language X, a hypothetical language excluded by K&C's criteria but not by Maxwell's criteria:

|                         | SU | DO | IO | OBL | GEN | OCOMP |
|-------------------------|----|----|----|-----|-----|-------|
| a. LANGUAGE X (Maxwell) |    |    |    |     |     |       |
| 1. Postnom GAP-S        | +  | -  | -  | -   | -   |       |
| 2. REL-S                | -  | -  | +  | -   | -   |       |
| 3. Postnom PRO-S        | -  | -  | -  | -   | +   |       |
| b. *LANGUAGE X (K&C)    |    |    |    |     |     |       |
| 1. Postnom, [-case]     | +  | -  | -  | -   | -   |       |
| 2. Postnom, [+case]     | -  | -  | +  | -   | +   |       |

Language X is disallowed by K&C's criteria since REL-S and Postnom PRO-S are conflated, which would result in an ineligible discontinuous [+case] strategy (20b). However, there seems to be no language presented by Maxwell in which we must allow discontinuities between REL-S and PRO-S. The discontinuities on the AH presented by strategies in Toba Batak, Javanese, Bahasa Malaysia, and Minang-Kebau are all between a GAP-S and PRO-S, while according to Maxwell, Maori (21) presents a discontinuity between GAP-S and REL-S.

(21) MAORI

|                  | SU | DO | IO | OBL | GEN | OCOMP |
|------------------|----|----|----|-----|-----|-------|
| 1. Postnom GAP-S | +  | -  | -  | -   |     |       |
| 2. REL-S         | -  | -  | -  | +/- |     |       |

(adapted from Maxwell, p.362)

We may correct this problem in one of two ways: First, we could stipulate the universal (22):

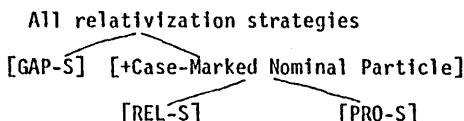
(22) Discontinuous strategies universal

A language may present a discontinuity on the AH only between a GAP-S and some other strategy.

This would be sufficient to rule out Language X under Maxwell's typology by disallowing any discontinuity between a REL-S and a PRO-S, and therefore Maxwell's claims would again be as

strong as K&C's. Another possibility would be for us to think of REL-S and PRO-S as strategies which form a super-class of strategies akin to [+case], perhaps better described as [+case-marked nominal particle]:

(23) Hierarchy avoiding necessity of stating (22)



Then if the unified REL-S and PRO-S superclass were also considered subject to the second hierarchy constraint, (22) would simply fall out from this hierarchical view of strategy-types (23). It is left as an open question which of these alternatives should be adopted.

What is perhaps the most troublesome aspect of Maxwell's typology has already been identified and discussed by Comrie and Keenan (1979): It is often difficult to distinguish relative pronouns from anaphoric pronouns on a universal basis. Relative pronouns are often homophonous with demonstrative or interrogative pronouns. It may even be the case that the class of relative pronouns and the class of simple anaphoric pronouns may not be mutually exclusive--that is, in classifying relativization strategies, it could conceivably be the case that a strategy could be both REL-S and PRO-S. This concern is evidenced in colloquial Czech, discussed by both Maxwell and C&K:

(24) Czech (colloquial): (a) REL-S, (b) Postnom PRO-S

|                                      |   |                  |
|--------------------------------------|---|------------------|
| Jan viděl toho muže                  | $\left\{ \begin{array}{l} \text{(a) ktere ho} \\ \text{(b) co ho} \end{array} \right\}$ | to děvče uhodilo |
| John saw that man                    |   | that girl hit    |
| "John saw the man whom the girl hit" |   |                  |

(Maxwell, p.367)

The (b) example is problematic; the combination of invariant marker plus anaphoric pronoun is at the front of the subordinate clause, the usual position for a relative pronoun. Maxwell

somewhat arbitrarily states the Czech construction is an example of PRO-S, and that it is the form and not the position of the morphemes which is important. Nevertheless, the anaphoric pronoun of the Czech construction is a clitic pronoun which may appear in second position even in simple sentences, according to C&K. Therefore, the position of the clitic pronoun in relative clauses is characteristic of clitics in simple declarative sentences, so the Czech construction is certainly PRO-S. The problem is, due to the vagueness of the REL-S definition, the Czech construction may also be an instance of REL-S.<sup>4</sup>

Although this problem is not easily corrected, we may at least guarantee that REL-S and PRO-S be maintained as mutually exclusive by reformulating the strategy definitions using semantic distinctions as follows:

(25) Redefining the Maxwell criteria

A PRO-S is a strategy in which the bound position is realized by an element allowing for the recoverability of case.

A REL-S is a strategy in which the binding position but not the bound position is realized by an element allowing for the recoverability of case.

A GAP-S is a strategy in which case is not recoverable by reference to an element in either the binding or the bound position.

These redefinitions have the fortunate result of making all strategy-types necessarily mutually exclusive. The primary emphasis is on case-recovery and whether case can be determined by reference to elements at two abstract sentential sites, the position of the binder and bindee. Naturally, the position of the two may be difficult to distinguish from surface, such as the case with English subject relativization: The binding and bound positions are contiguous, and if both positions are not represented in surface structure, which is often the case, we will not be able to tell from that particular construction whether it is REL-S or PRO-S: We will simply have to make reference to relativization of other positions on the AH and the similarity of constructions in order to determine whether a morpheme is superficially in binder or bound position in surface structure. More specific principles may be available to make the determina-



tion; for example, that an invariant marker (i.e., bearing no semantic features of the relativized NP) always occupies the bound position, when it appears, without an NP. The issue should not be considered closed here; undoubtedly better definitions for strategy-type will appear. I would simply like to indicate the direction in which I believe this research should be developed initially.<sup>5</sup>

I have presented evidence that K&C's criteria for strategy-type are insufficient in both formulations; that in spite of difficulties with formulation, Maxwell's division of [+case] into REL-S and PRO-S is to be preferred, not only due to the expression of additional universals or to reduce the number of languages which the hierarchy constraints are true of, but also simply because languages with apparently unrelated REL-S and PRO-S strategies, such as Bahasa Indonesia, exist. I have indicated several revisions of Maxwell's criteria which I believe to be necessary, the new strategy name GAP-S, the alternative methods of formulating a discontinuous strategies universal ((22),(23)), and redefinitions for the strategy-types, essentially semantic as is K&C's definition of the restrictive relative clause. It is important to realize that the goal of linguistic typology is to formulate clear and accurate descriptions of facts which may be used to test the predictions of linguistic theories. I hope to have contributed to this worthwhile enterprise.

#### NOTES

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\*\*This NP position does not exist as such in the particular language, but rather is treated as some other position. A blank on an AH relativizability chart indicates that the data is lacking.

<sup>1</sup>SU=Subject, DO=Direct Object, IO=Indirect Object, OBL=Oblique, GEN=Genitive, OCOMP=Object of Comparison.

<sup>2</sup>If Maxwell's claim can be maintained and shown to be superior to K&C's, it falsifies Keenan's semantically-based grammar, which explicitly claims that only Pro-names and never full NP's occur as the shared nominal in relative clauses.

<sup>3</sup>Kenneth Miner informs me that Dutch is not the only language with a subject/object thematic ambiguity in relative clauses: The Amerindian language Algonquian also maintains a relative clause construction with similar ambiguity. Indeed, the Amerindian languages are unrepresented in K&C's sample, an oversight which should be corrected.

Another language with similar subject/object indeterminacy is the direct relative of Modern Irish (see McCloskey 1977).

<sup>4</sup>According to A. Koutsoudas, a similar situation exists in Modern Greek, in which the clitic pronoun may even begin the sentence, due to the possibility of subject deletion. Modern Greek is another language claimed by Maxwell to relativize by means of an invariant marker plus a fronted anaphoric pronoun. Nevertheless, the fronting may be considered to be due to clitic movement, rather than movement into the position associated with complementizer.

<sup>5</sup>There is a fourth problem associated with Maxwell's typology, that of incompleteness, which will necessitate a study in itself. In addition to the strategies already mentioned, Givón's study, upon which Maxwell's typology is based, lists three more strategy-types: verb-marking strategies, Equi-case strategies, and nominalization strategies. Verb-marking strategies such as the Philippine languages use may be considered instances of GAP-S. I know of no documented cases of Equi-case strategies, in which a GAP-S is only possible on the condition that the head noun and relativized nominal bear identical relations. Givón includes this strategy-type in his informal typology, but does not give clear examples of its actual occurrence. While it is possible that this might be a special case of GAP-S, further investigation of this phenomenon is necessary. Many instances of nominalization strategies appear to have nothing to do with case-coding but instead how a clause is recognized as subordinate. In Yaqui, the example language given by Givón, the

sentences appear to be GAP-S with verb-marking to indicate the relational function of the deleted NP and (as well) some or all of the arguments in the subordinate clause appear in genitive case. Differentiating between nominalization strategies and GAP-S would therefore be pointless unless some reason were found to differentiate them, such as a language which contrasted separate nominalization and GAP strategies. According to K&C's data (1979:336), Fulani is such a language: Fulani has a GAP-S for Subject through Indirect Object and, as well, a nominalization ("post-head participial") construction for Subject only, given a positive verb. Thus it appears that Maxwell's criteria are truly incomplete, and that further research is necessary to determine what strategy-types in addition to those Maxwell proposes must also be defined in order to cover the contrasting structural types in a universal typology.

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